

Claims:

1. A purified osteopontin derived chemotactic peptide.
- 5 2. A purified osteopontin derived peptide having chemotactic activity.
3. A purified osteopontin derived chemotactic peptide comprising the amino acid sequence LVLDPK (SEQ ID NO:1).
- 10 4. A purified osteopontin derived peptide comprising the amino acid sequence LVLDPK (SEQ ID NO:1) and having chemotactic activity.
5. A purified osteopontin derived chemotactic peptide comprising the amino acid sequence VLDPK (SEQ ID NO:7).
- 15 6. A purified osteopontin derived peptide comprising the amino acid sequence VLDPK (SEQ ID NO:7) and having chemotactic activity.
- 20 7. An isolated nucleic acid encoding an osteopontin derived peptide having chemotactic activity.
8. A purified osteopontin derived chemotactic peptide comprising the amino acid sequence LVLDPK (SEQ ID NO:1) wherein said peptide is no more than about 60 amino acids in length.
- 25 9. A purified osteopontin derived chemotactic peptide comprising a sequence of the formula  $n\text{-R}^1\text{-R}^2\text{-R}^3\text{-R}^4\text{-R}^5\text{-R}^6\text{-R}^7\text{-R}^8\text{-c}$ , wherein
  - $\text{R}^1$  is 0, 1, 3, 5, 10, 15, 20, 25, or 27 amino acids long;
  - $\text{R}^2$  is Leu, Val, Met or absent;
  - 30  $\text{R}^3$  is Val, Leu, Ile or Met;
  - $\text{R}^4$  is Leu, Val, Pro or Ile;
  - $\text{R}^5$  is aspartic acid or any acidic amino acid;
  - $\text{R}^6$  is Pro or Ser;
  - $\text{R}^7$  is Lys, Arg, Met or Ile;
  - 35  $\text{R}^8$  is 0, 1, 3, 5, 10, 15, 20, 25 or 27 amino acids long;

wherein c indicates the carboxy terminal direction of the peptide and n indicates the amino terminal direction of the peptide.

10. A therapeutic composition comprising an osteopontin derived chemotactic peptide and a pharmaceutically-acceptable carrier or diluent.
11. The composition of claim 10, wherein said carrier is a matrix.
12. The composition of claim 11, wherein said matrix is selected from the group consisting of fibrin, collagen, gelatin and agarose.
13. A method for modulating tumor invasion in a subject, comprising administering to a subject a therapeutically effective amount of an antagonist of an osteopontin derived chemotactic peptide such that tumor invasion is modulated.
14. The method of claim 13, wherein said antagonist is encoded by a nucleic acid.
15. A method for promoting wound healing in a subject, comprising administering to a subject a therapeutically effective amount of a composition comprising an osteopontin derived chemotactic peptide and a pharmaceutically-acceptable carrier or diluent such that wound healing is promoted.
16. The method of claim 15, wherein said carrier or diluent is selected from the consisting of albumin, sterile water, polyethylene glycol and saline.
17. The method of claim 15, wherein said composition includes an adjuvant.
18. The method of claim 15, wherein said composition is administered topically.
19. A method for modulating tumor metastasis formation, comprising administering to a subject a therapeutically effective amount of an antibody specifically reactive with an osteopontin derived chemotactic peptide such that tumor metastasis formation is modulated.
20. The method of claim 19, wherein said antibody consists of the amino acid sequence KFHSKDKLVLDPKSK (SEQ ID NO:2).
21. A method for promoting cell migration to a target site, comprising administering to a cell a therapeutically effective amount of an osteopontin derived chemotactic peptide such that migration of said cell to said target site is promoted.

22. A method for modulating cellular chemotaxis, comprising administering to a cell a therapeutically effective amount of an osteopontin derived chemotactic peptide such that modulation of cellular chemotaxis occurs.
- 5 23. In a prosthetic device, the improvement comprising, the incorporation of a therapeutically effective amount of an osteopontin derived chemotactic peptide in said prosthetic device.
- 10 24. The device of claim 23, wherein said prosthetic device is selected from the group consisting of an artificial hip, an artificial knee, an artificial artery, an artificial vein and an artificial skin..
- 15 25. The device of claim 23, wherein said chemotactic peptide is incorporated using non-covalent bonding between said chemotactic peptide and said prosthetic device.
- 20 26. A method for treating the formation of atherosclerotic plaques, comprising administering to a subject a therapeutically effective amount of an osteopontin derived chemotactic peptide such that formation of atherosclerotic plaques is prevented.
- 25 27. A method for treating an angiogenic-associated disease, comprising administering to a subject a therapeutically effective amount of an antibody specifically reactive with an osteopontin derived chemotactic peptide such that treatment of angiogenic-associated disease occurs.
- 30 28. The method of claim 27, wherein said angiogenic-associated disease is selected from the group consisting of arthritis, psoriasis, hemangioma, tumor metastasis and ocular neovascularization.
29. A method of inducing either *in vitro* or *in vivo* chemotaxis of a cell, comprising administering to a cell an osteopontin derived chemotactic peptide in an amount effective to induce chemotaxis.
- 30 29. The method of claim 29, wherein said cell is a mammalian cell.
- 35 31. The method of claim 29, wherein said cell is selected from the group consisting of smooth muscle cells, macrophages, endothelial cells, vascular cells and cancerous cells.
32. An antibody specifically reactive with an osteopontin derived chemotactic peptide.

33. The antibody of claim 32, wherein said antibody consists of the amino acid sequence KFHSHKDKLVLDPKSK (SEQ ID NO:2).